



# Making emotional information retrieval a reality

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# Emotional responses to documents are collective as well as personal (Wilson, 1967)



# News photography image retrieval practices: Locus of control in two contexts (PhD dissertation, 2006)



Sgt. Lonnie Roberts cries at a memorial service Wednesday April 16, 2003 in Baghdad for PV2 Gregory R. Huxley, Jr., 19, of Forestport, N.Y. who was killed in action April 6th when the armored personnel carrier he was riding in was hit by a rocket propelled grenade. Huxley had just finished basic training five months earlier. Roberts was the squad leader and was riding in the carrier at the time of the incident. He is a member of 317 Engineer Battalion, 2nd Platoon Bravo Company. Source: David Leeson, The Dallas Morning News.

# Toward Web 2.0 music information retrieval: Utilizing emotion-based, user-assigned descriptors (ASIS&T 2007)



- Glass Engine: sliding bar interface; by emotion???
- Users rated Philip Glass pieces and other pieces for their felt emotion
- Emotions ranked: happiness, sadness, anger, fear, disgust
- No emotions ranked highly ( $x=6.2/9$ ) except “happiness” for Vivaldi’s “Four Seasons” Spring movement ( $8.2/9$ )

# Collective indexing of emotions in images. A study in emotional information retrieval (*JASIST*, 2009)



FIG. 1. Scroll bars for tagging intensities of emotions. (happiness [Freude], anger [Ärger], sadness [Traurigkeit], disgust [Ekel], fear [Angst]).

- “[W]e will follow a fourth approach recently developed by Hyuk-Jin Lee and Diane Neal (2007) for emotional music information retrieval: the application of scroll bars for tagging basic emotions and their intensities” (p. 864).
- Most of the (most commonly used) linguistic tags are on the basic level (in the sense of Rosch’s basic level theory). The distributions of the linguistic tags in our examples follow an inverse power-law. Hence, it seems possible to apply collective image emotion tagging to image information systems and to present a new search option for basic emotions. This article is one of the first steps in the research area of emotional information retrieval (EmIR)” (p. 865).

# Musical facets, tags, and emotion: Can we agree? (iConference, 2009)



“The top ten songs most frequently tagged with each of five emotions (Happy, Sad, Anger, Disgust, and Fear), as well as synonyms for these emotions, were collected, for a total of fifty songs. Six researchers analyzed the songs’ facets qualitatively. Content analysis on the Pitch and Temporal musical facets revealed that Happy songs elicited the most agreement among the researchers, while Hate songs extracted the least agreement. An assimilation of the other facets and free-text comments exposed general agreement, but significant individual differences were also discovered, making agreement for the purpose of music information retrieval inconclusive.”

“This came out near the end of my high school years, and as an R.E.M. lover for years, it holds a great deal of personal significance for me. I listened to this while in a melancholic mood, and it brought tears to my eyes... longing for the past, and (perhaps only momentarily) wanting a different present. Cheered up by listening to ‘Stand.’”



# Emotion-based tags in photographic documents: The interplay of text, image, and social influence (*CJILS*, 2010)

- Visual themes: facial expression, colour, light contrast, symbolic, inanimate observation, action, social norms
- Textual themes: storytelling, jokes, inside story, text-as-image, antithesis, personal opinion
- Happy pictures had the most views
- Most relevant pictures had the most views and the most favourites
- Social interaction affects relevance, or relevance affects social interaction
- Non-parametric measures found statistically significant differences between most relevant and least relevant pictures, between the number of views and number of favourites within each emotion, and between pictures with different emotion-based tags.



# Breaking in and out of the silos: What makes for a happy photograph cluster? (DOCAM, 2010)

- Simple random sample of 100 “happy” Flickr images
- Smiling faces, babies, love, animals



<https://www.flickr.com/photos/kekede productions/4338950543/>



# Finding emotional-laden resources on the World Wide Web (*Information*, 2010)

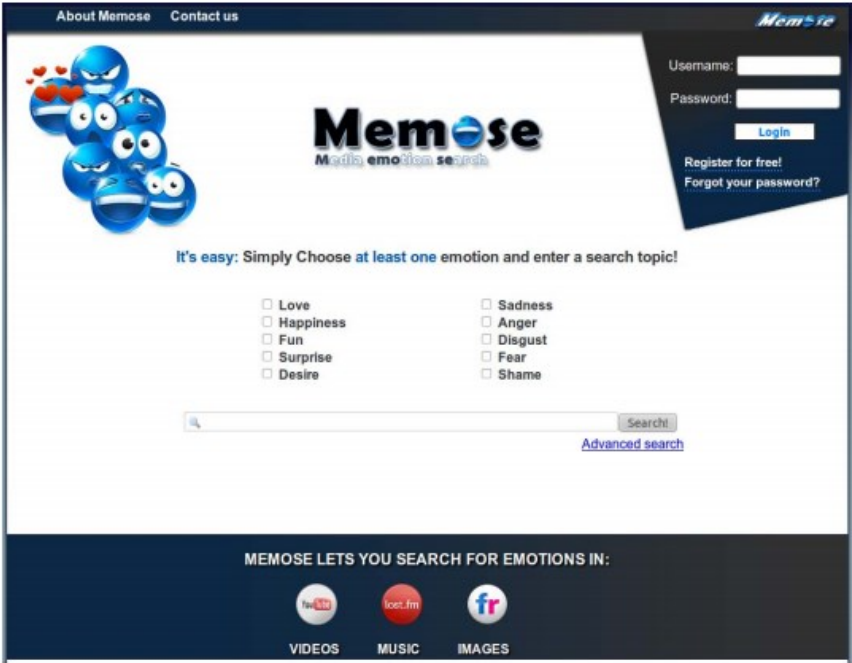
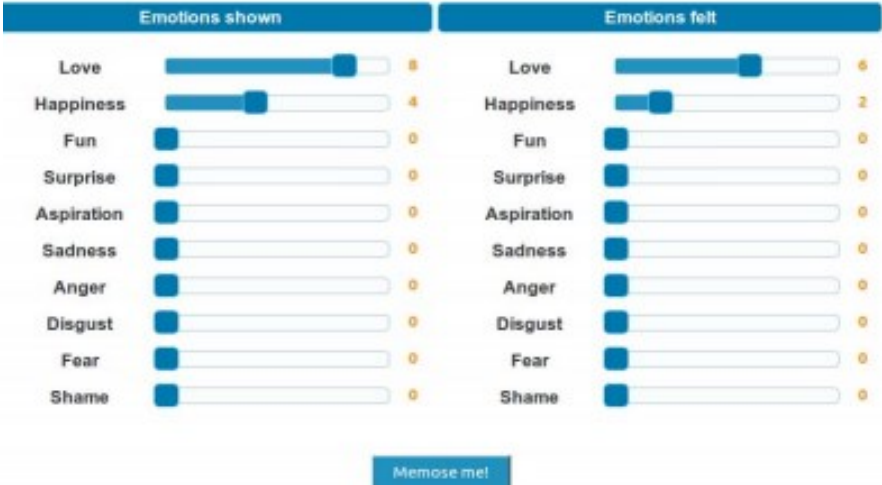


Figure 2. Tagging an image with emotional tags.



id:2860380206  
flickr url: <http://www.flickr.com/photos/zinnie/2860380206/>  
title: Young greenland dogs, Qeqertarsuaq, Greenland  
description: Explore: Sep 15, 2008 #145 The Greenland Dog is a large breed of husky-type dog kept as a sled dog.



# MEMOSE: Search engine for emotions in multimedia documents (SIGIR, 2010)

**Table 1.** Consistency of emotional voting (standard deviation).

<i>Basic emotion</i>	<i>Images</i>	<i>Videos (expressed emotions)</i>	<i>Videos (felt emotions)</i>
<b>Love</b>		0.88	0.66
<b>Disgust</b>	2.23	0.92	0.91
<b>Sadness</b>	3.07	1.11	1.15
<b>Anger</b>	2.46	1.21	1.15
<b>Fun</b>		1.46	1.24
<b>Happiness</b>	3.31	1.54	1.36
<b>Desire</b>		1.55	1.56
<b>Fear</b>	2.74	1.61	1.71
<b>Surprise</b>		1.94	1.75

*Note:* N = 776 participants (images); N = 763 participants (videos). Sources: [45,51].

‘The most passionate cover I’ve seen’:  
Emotional information in fan-created U2 music  
videos (*Journal of Documentation*, 2016)



U2 #SongForSomeone #France

Published on 24 Mar 2015

U2 #SongForSomeone #France

This is my new personal version for #SongForSomeone Event.

I will see U2 tour the 11 and 14 th November At Paris Bercy , I hope see my version on stage.

Thank you so much U2.com and U2 for the #SongForSomeone Event.

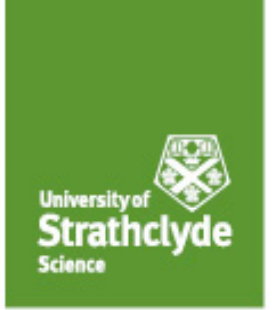
Source: <https://www.youtube.com/watch?v=dbpqxF-Y9Ik>

How do the video *producers* in this fandom communicate emotional information in the filmic documents?



- Visual
  - Closing eyes, smiling while singing
  - Surroundings: sunny outdoor locations, personal places, U2 items in those places
- Musical
  - Slow tempo, final ritardando, legato articulation
- Intended response: effect on the consumers
  - “Hope you like my cover version”
- Personal experience
  - “A special place in our hearts is always kept for you” – family member who died

# Individual emotional connection



- “My entry for the Song for Someone contest ... this song means so much to me I couldn’t help but enter”
- “was awoken [sic] by the last three lines ... and I fell in love ... It is amazing how one part of a song can call out to you and make you want to listen to it over and over again”



# Visual/musical simplicity



Published on 25 Mar 2015

I am hoping U2 will showcase this cover (as per their Facebook post), so please watch and enjoy. Oh... and please subscribe :- ) #SongForSomeone #Scotland



**Drew Gardner** 8 months ago

Great voice - loving the Scottish accent. "What accent?" You say! Ha! Tremendous guitar skills!

Reply · 1 · 👍 · 🗨️



**David Fettes** 8 months ago

Hey Drew. Thanks so much for your comments :- ) You're right though, I hear no accent. Haha.

Reply · 👍 · 🗨️

# Visual displays of U2 paraphernalia



#SongForSomeone #Belgium

# Band photographs



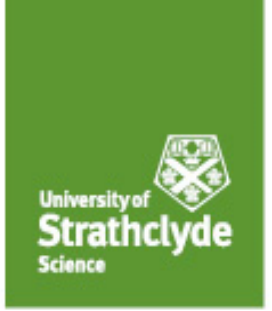
# Imitating the band



"Song for Someone" - Rattle and Hum U2 Tribute  
(Acoustic Sessions)



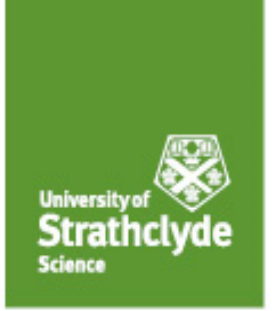
How do the *consumers* in this fandom communicate emotional responses to these filmic documents?



- Quality of the cover
  - “This is the most heartfelt, amazingly beautiful version I have heard of this song, girls!”
  - “Your cover is amazing... Is so quiet... So deep and relaxing...”
- Emotional impact of the song
  - “Beautiful song. Intense meaning.”
  - “Omg this song makes me melt every time I hear it.”
  - “Una canzone piena di emozioni” (Italian for “a song full of emotions”)



# Main points



- U2 respected as the authoritative creator of the song
- Cover version as a separately authoritative version of the song? (Derrida, 1977)
- A good cover is emotional, passionate, simple, and tender
- Emotion is socially constructed within the fandom as well as individually experienced

# The future of EmIR



- Methodological issues in capturing, measuring, implementing emotion
  - Automated approaches don't account for human experience
  - Qualitative approaches are small-scale
  - Cold-start problem
  - Tension between authority and democracy in representation
- EmIR systems should account for collective experiences as well as personal preferences
- How do we do this?